

CELL SEPARATION APPARATUS

ABSTRACT

An apparatus **20** for the separation of a subpopulation of cells from an intact organ or other biological material is provided. The apparatus **20** includes: (1) a digestion chamber **24** that integrates the primary digestion process, (2) a measuring cylinder **26**, (3) a cell collection chamber **28**, (4) a heat exchanger **30** for raising and lowering temperatures in the digestion chamber **24** to activate or inactivate enzymes, (5) sensors **112, 114, 116, 118, 120, 122** to complete a closed feedback loop for allowing optimization of the digestion process, and (6) mock cells which mimic the cells to be harvested and which are used to fully optimize the process without unnecessary destruction of harvested cells. The manipulation of the digestion process may be manual or may be automated under computer control.